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III. *An Account of an Experiment, shewing that an Object may become visible through such an Opake Body as Pitch in the Dark, while it is under the Ctrcumstances of Attrition and a Vacuum.* By Mr. Fr. Hauksbee, F. R. S.

THIS Experiment affords a signal Confirmation of another formerly made, and differs only in the Matter made use of. I before used Sealing-wax, but now made choice of Pitch, which I serv'd as the Sealing-wax; that is, I melted it in a Globe-glass, and kept it turning about 'till the larger half had got a pretty thick lining of it; it was even so thick that a Ray of Light could no way penetrate it. This Globe I exhausted of its contained Air; then (being Night) I put it on the Engine to give motion to it; where, after it had been turn'd a little while, with my Hand on that half lined with the Pitch, I could very easily discover thro' the transparent part, on the inward surface of the Pitch, the very shape and lines of it, as likewise of my Fingers; for the most eminent Parts of the Hand and Fingers that toucht the Glass, appeared all luminous: The other Parts discovered themselves by the dark Intervals they made between the enlighten'd Parts: And when the Fingers were spread or clos'd, 'twas very obvious to the Sight. Now, after a small quantity of Air was let in, the Light disappear'd on the inside of the lined part (but not on the other,) which began to discover it self more and more on the outside; tho' even in Vacuo there was always a Light attended on the touch of those Parts that were most contiguous to the

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the Glas: But now a Circle of Light would discover it self just on the edge of the Pitch which seperated it from the transparent Part, as likewise another ring of Light somewhat nearer to the Axis of the Glas, but both these when the Hand was apply'd to the under part; for when it was remov'd to the contrary, no such appearance ensu'd. The transparent half of the Glas was in all Circumstances as in former Experiments. When all the Air was let in, the Electricity of the Glas in all its parts, the Lin'd as well as the Transparent, performed much alike. The Threds seem'd to be attracted every where with equal Vigour. To conclude; this, and the foremention'd Experiment of the Sealing-wax, plainly discover, a transparent Quality in some Bodies (we call Opaque) under such and such Circumstances: Bodies which are really Opaque, have hitherto been thought to continue always so. It was never so much as suspected, that they could exchange that Quality for the contrary one, and then come back from that contrary one to their old State again: That they should pass from Opaque to Pellucid, and from Pellucid to Opaque; at one time admit, and at another time oppose the passage of Light: And all this by a meer change of external Circumstances. This Property I say is as new as 'tis real and surprizing; and the bare consideration of so very unlikely and unexpected a thing, may be a ground of encouragement to hope, that some other odd Properties of Bodies, by some lucky Trials, may hereafter (as this has done) surprize us with a discovery of themselves. I shall only add, that what is said towards a Reason of such an Appearance in the Experiment of the Sealing-wax, I think is very applicable to this; to which I refer. See *Physico-mechanical Experiments on various Subjects*, Pag. 131.